

dentition of the vole *, 25 per cent. of specimens examined may be abnormal, a fact which, when still larger numbers are available, may yet prove the saving of my subdivision of the hedgehogs.

In conclusion, I must thank my critic for the exceedingly temperate and forbearing way in which his remarks are couched. Criticisms thus conscientiously formed and fairly expressed cannot surely fail to advance our science.

BIBLIOGRAPHICAL NOTICES.

Zoological Results based on Material from New Britain, New Guinea, Loyalty Islands, and elsewhere, collected during the Years 1895, 1896, and 1897, by Arthur Willey, D.Sc. Lond., Hon. M.A. Cantab. Part IV. Cambridge, May 1900.

THE long-delayed fourth part of Dr. Willey's 'Zoological Results' is now before us and proves fully equal, both in interest and in the general excellence of its contents, to its predecessors. It contains ten memoirs, the majority of which are devoted to reports on the collections made by Dr. Willey in various groups of the animal kingdom. Three, however, are on subjects of morphological interest. The first of these is the opening paper of the volume by Mr. J. Stanley Gardiner, "On the Anatomy of a supposed new Species of *Cænopsammia* from Lifu." Mr. Gardiner divides his subject into four heads, dealing respectively with the general anatomy of the skeleton and specific description, the general anatomy of the polyps, minute anatomy, and some conclusions relating to the body-layers in the Actinozoa. He comes to the conclusion that the whole filament of the primary and secondary, and probably also that of the tertiary, mesenteries is ectodermic in origin, and that the whole of the digestion of the animal is performed by these filaments, and draws the important deduction that the stomodæum of Actinozoa is not comparable with that of the Triploblastica, but is rather, with the mesenterial filaments, the homologue of the whole gut. The so-called endoderm is homologous with the mesoderm of Triploblastica, and the Actinozoan polyp ought to be regarded as a Triploblastic form.

The second of the morphological papers is by Mr. J. J. Lister on *Astrosclera Willeyana*, the type of a new family of sponges. This is a very remarkable organism, with a massive calcareous skeleton of polyhedral elements united to form a rigid skeleton and excluding the soft parts, an arrangement which is only approached among living sponges in the genus *Petrostoma*. Among several points in which *Astrosclera* differs from the rest of the Porifera may be mentioned the absence of a central atrial space, the minute size of the flagellated chambers, and the peculiar form of the flagellated cells,

* As shown by Mr. G. S. Miller, Jun.

which appear to be without "collars" and to taper gradually into the flagellum.

The skeleton of *Astrosclera* in many ways recalls that of the extinct *Pharetrones*, and Mr. Lister devotes a considerable space to the consideration of the possible relationship of the two groups, but comes to the conclusion that there is no clear affinity between them.

The paper on *Astrosclera* is followed in the volume by a memoir by Mr. W. P. Pycraft, "On the Pterylography of the Megapodii," dealing with the pterylosis of the adult, the nestling, and the embryo. In the course of some remarks on the nature of the nestling plumage, Mr. Pycraft advances the view that this does not, in *Megapodius*, consist of true neossoptiles, but of a growth of feathers intermediate between the latter and the definitive contour feathers of the adult. Similar feathers are found in the nestling owl. There are no preplumulæ and the true prepennæ are shed during embryonic life.

The remaining papers in the volume are respectively by Dr. D. Sharp on the Insects from New Britain, by Mr. L. A. Borradaile on the Stomatopoda and Macrura, by Mr. Walter Collinge on the Slugs, Miss Philipps on the Polyzoa, Miss Thornely on the Hydrozoa, Professor Hickson and Miss Hiles on the Stolonifera and Alcyonacea, and Dr. Ashworth on the Xeniidæ, the whole series forming a valuable addition to our knowledge of the zoology of the regions visited by Dr. Willey.

A Monograph of the Coleopterous Families Corylophidæ and Sphæriidæ. By the Rev. A. MATTHEWS, M.A. Edited by PHILIP B. MASON, M.R.C.S., F.L.S., F.Z.S., &c. London: O. E. Janson, 1899.

THIS work is published in the same form as the author's previous monograph on the Trichopterygidæ. It consists of 220 pages of letterpress, and is illustrated with nine plates in outline, with details of structure. One hundred and sixty-nine species are described. The author concludes that the affinity of the Corylophidæ is with the Silphidæ and Leptinidæ, and places the families thus:—Leptinidæ, Corylophidæ, Phænocephalidæ, Silphidæ.

The Phænocephalidæ consists of a single genus, *Phænocephalus*, separated from the Corylophidæ on account of the maxillæ having two lobes, &c. *Aphanocephalus*, originally described as a member of the Corylophidæ, is separated as a distinct family, Pseudocorylophidæ, chiefly on account of the maxillæ having "three lobes," somewhat as in the Trichopterygidæ. The family is placed between the Corylophidæ and Phænocephalidæ in the work, but the author would "retain it in the position now occupied by the whole family, in the vicinity of the Coccinellidæ." This is a most interesting point, for the Coccinellidæ, formerly placed at the end of the Coleoptera entirely away from the Clavicornia, are now by some eminent Coleopterists located with them.

The various genera included in the Corylophidæ are so diverse